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Summary

Sustainable development remains elusive for much of Africa; the Johannesburg Plan of Implementation identifies actions for meeting this important challenge. It calls for stabilizing economic growth and critical investments in infrastructure, skills and research that will foster long-term development. It also calls for improved nutrition, health and education, irrespective of gender, and the strengthening of natural resource management and conservation of natural assets, as well as adaptation to challenges ahead, such as climate change.

Among the impediments to sustainable development, extreme poverty ranks first. Many Africans remain trapped in dire poverty, heavily dependent on a fragile natural resource base and vulnerable to economic and environmental shocks. Furthermore, the prevalence of armed conflicts and pandemic diseases such as malaria and HIV/AIDS disrupt African societies. Weak governance remains an issue in many countries, not least those enjoying earnings from high energy and mineral prices. Against this backdrop, African policymakers have been very active in recent years, opening up new prospects for the region.

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I. Introduction

1. The present report measures progress achieved with respect to goals and targets for Africa in Agenda 21, the Programme for the Further Implementation of Agenda 21 and especially in section VIII of the Johannesburg Plan of Implementation, and highlights the challenges and impediments to sustainable development in Africa. It benefited from the national reports submitted to the Commission on Sustainable Development secretariat, outcomes of regional implementation meetings and inputs from stakeholders and major groups.

II. Overview of progress on sustainable development in Africa

A. Poverty reduction, demographic growth and growth of gross domestic product

2. From the end of the 1970s until very recently, most African economies did not enjoy significant development. From 1970 to 2005, African populations increased by 121 per cent and 162 per cent, in North and sub-Saharan Africa respectively.[1] Average real per capita income in sub-Saharan Africa was virtually unchanged between 1980 ($589 in constant 2000 United States dollars) and 2005 ($569 in constant 2000 United States dollars), while industrial and agricultural productivity remained at very low levels. The sub-Saharan African share of world exports[2] shrank from 2.8 per cent to 1.4 per cent between 1980 and 2005. A variety of macroeconomic factors — including the legacy of import substitution within small domestic markets, terms-of-trade deterioration and the debt crisis, combined with demographic pressures, health crises and armed conflict — contributed to these unfavourable trends.

3. As a result of demographic pressures and economic difficulties, sub-Saharan Africa is not on track to achieve the Millennium Development Goals related to poverty and hunger. Although modest gains have been observed recently in reducing poverty rates, 41 per cent of the sub-Saharan African population (or roughly 300 million people) still live on one dollar a day or less.[3] A recent study[4] of extreme poverty finds that, of 162 million "ultra-poor" people in the world, who subsist on less than $0.50 a day, 121 million live in sub-Saharan Africa. Moreover, like the dollar-a-day poverty rate, the ultra-poverty rate has declined only marginally in sub-Saharan Africa since 1990.

4. In contrast with previous decades, African economies have performed well in the new millennium. In the past few years, sub-Saharan Africa's real gross domestic product (GDP) growth has been accelerating, averaging 5.9 per cent in 2005, 6.1 per cent in 2006 and an estimated 7.0 per cent in 2007.[5] Per capita GDP grew by almost 2 per cent per year from 2000 to 2005, whereas it had actually declined

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[1] Department of Economic and Social Affairs, Population Division, *World Population Prospects: The 2006 Revision*, population database.

[2] *World Development Indicators 2007*, World Bank.

[3] http://mdgs.un.org/unsd/mdg/Default.aspx.

[4] International Food Policy Research Institute, "The world's most deprived: characteristics and causes of extreme poverty and hunger", November 2007.

[5] Department of Economic and Social Affairs, *World Economic Situation and Prospects 2008*.

slightly during the 1990s. Africa's recent growth performance has been underpinned by improvement in macroeconomic management in many countries and strong global demand for key African export commodities, sustaining high export prices, especially for crude oil, metals and minerals. A reduction in the number of armed conflicts has also contributed to improved performance. In consequence, growth has accelerated in most countries of the continent; for many countries, recent years have seen the strongest growth performance since independence.

B. Health and education, including gender dimensions

5. Poverty and health conditions are intimately related. African populations are heavily burdened by poverty-related diseases, and debilitating diseases keep many people in extreme poverty. Sub-Saharan Africa is the only region of the world where life expectancy has fallen over recent decades, reaching levels below 40 years in Botswana, Lesotho, Zambia and Zimbabwe.[2] The child mortality rate is the highest in the world, with an average under-five mortality rate of 163 per 1,000 in 2005 — double South Asia's. The maternal mortality rate per 100,000 live births is 100 times as high in sub-Saharan Africa as in the developed regions of the world.[6] Malaria and HIV kill in Africa more than anywhere in the world, with some 800,000 children under the age of five dying each year of malaria from 2000 to 2003 and 2 million people dying from AIDS in 2006.[7]

6. In terms of education, African countries lag behind, but the recent efforts towards universal primary education have generated significant improvements. Primary-school enrolment increased from 57 per cent to 70 per cent between 1999 and 2005. The access of girls to school remains insufficient, leaving women with few skills to make them employable outside agriculture and the informal sector, and affecting family planning, education and other household investment decisions. If farming is excluded, women accounted for less than one third of salary earners in 2005.[3]

III. Globalization in Africa

A. International commodity trade and revenue management

7. As a result of the current boom in world commodity prices, most African countries have benefited from increased export revenues since 2000. Prices of agricultural raw materials and mineral ores and metals rose by 52 per cent and 178 per cent, respectively, from 2000 to 2006, leading to a near-doubling in the value of African exports. African oil exporters were particularly advantaged, with an increase of 128 per cent in the price of crude petroleum[8] contributing to strong economic growth. Some countries, such as Guinea and Mozambique, have seized the opportunity of higher commodity prices to diversify into higher value-added commodities. Hence, the production of aluminium in those countries grew from 340,000 to 959,000 tons between 2000 and 2004.

[6] http://www.unfpa.org/mothers/statistics.htm.

[7] World Health Organization, *Opportunities for Africa's Newborns*, 2006.

[8] *UNCTAD Commodity Yearbook* (2007).

8. However, the commodity boom has also posed economic challenges for some African countries. For commodity importers, especially oil importers, it negatively affects economic growth and external accounts. For some commodity exporters, the price boom has been associated with an excessive appreciation of exchange rates. As a result, their industrial performance has generally remained poor and the prospects for diversification limited. Besides, many African countries export commodities the prices of which have not increased or are still far from the levels they reached in previous decades. Hence, exporters of cotton, tobacco, tea, coffee, cocoa and phosphate rock have lagged behind.

9. The management of the export revenues resulting from this commodity boom can also pose challenges. Most African countries have limited capacities to absorb these additional revenues. In many cases, the surge in cash flow is not allocated to the development of education and social services or to the benefit of local industries. It can generate opportunities for corruption and revenue diversion to the benefit of a small number of people and to expenditure on low-priority but high-visibility building projects.[9]

10. Improving the management of these revenues is critical to ensure that the opportunity does not turn into a "natural resource curse". Greater corporate social and environmental responsibility (see Johannesburg Plan of Implementation, para. 62 (g)) and greater transparency in the management of financial flows still require urgent attention. In this regard, the African Mining Network, which was launched in 2005 under the auspices of the United Nations Conference on Trade and Development (UNCTAD) and the Economic Commission for Africa (ECA), and the Extractive Industries Transparency Initiative respond to the need for greater transparency through the collection and dissemination of critical information on oil and mineral revenues.

B. Export diversification, including high-value agriculture

11. Industrial diversification has been recognized as a priority for Africa, and has been identified as a goal by the international community (see Johannesburg Plan of Implementation, para. 62 (f)). It contributes to the development process as it insulates countries from the risks of mono-specialization. It helps developing countries to stabilize financial inflows and exchange rates. It partially reduces the impact of excessive price volatility on commodity markets. Furthermore, it can enable countries to capture a larger share in the value-added chain. Hence, countries initially specialized in a limited number of commodity exports can substantially increase their revenues when they diversify their activities into the industries that transform raw commodities into semi-finished and finished products.

12. Despite a sustained effort until the mid-1980s, African economies remain insufficiently diversified. Natural constraints, devastating conflicts, insufficient infrastructure, poor governance and weak technological capabilities have constituted major impediments to this diversification process. Except for a few countries, such as Mauritius and Tunisia, most rely on a limited number of products, generally classified as commodities. In 2005, agricultural raw materials, ores and metals and fuels represented 68 per cent of the region's exports, while these commodities

[9] ECA, *Economic Report on Africa*, 2007.

account for 33 per cent and 21 per cent of the exports of Latin American and Asian developing countries, respectively.[10]

13. The New Partnership for Africa's Development (NEPAD) has actively contributed to the reflection on African industrialization, emphasizing the importance of creating conditions to stimulate greater inward investment.[11] Similarly, ECA underscored the importance of diversification for Africa economies in its latest *Economic Report on Africa* (2007). The African Union Summit in Addis Ababa in January 2008 had as its main theme the industrialization of Africa.

C. Industrial productivity, business climate and competitiveness

14. Despite the core importance of industrialization in the development process, African industries have generally underperformed over the past few decades. From a high of 16.7 per cent in 1989, the share of manufacturing value added in sub-Saharan African GDP had fallen to 14 per cent in 2005; with mining, construction and utilities also included, the share of industrial value added in GDP went from 34.8 per cent in 1989 to 31.8 per cent in 2005. If South Africa is excluded, the share of sub-Saharan African industries in world industrial output fell from 0.79 per cent to 0.74 per cent over the period from 1990 to 2002.[2]

15. Although it is difficult to estimate precisely the relative importance of different business climate factors, it appears that common major bottlenecks in Africa are macroeconomic instability, insufficient access to credit, scant foreign direct investment (FDI) inflows and inadequate governance. These bottlenecks, added to structural factors such as unfavourable climatic and geographic conditions as well as the underdevelopment of major infrastructure, have increased production costs and reduced African competitiveness.

16. Development through industrialization has been a long-term objective for many African countries, multilateral organizations and donors. Among the recent experiences of industrialization in Africa, the strategy of Tunisia deserves special mention, as it has achieved steady industrial growth rates despite limited endowments. At the multilateral level, the role of NEPAD is to be highlighted. In line with the NEPAD strategy for sustainable industrial development, the United Nations Industrial Development Organization has launched the African Productive Capacity Initiative, involving numerous technical cooperation projects.

IV. Protecting and managing the natural resource base

A. Forests

17. African forests account for 17 per cent of global forest cover. Forests are crucial for livelihoods as well as economic development in Africa. They contribute to social welfare through various valuable functions, such as supplying timber, non-timber products, energy, food, medicines and grazing; water and soil retention; regulation of the flow and quality of water; supporting the biodiversity of habitats;

[10] UNCTAD, *Handbook of Statistics*, 2006.

[11] See "A summary of NEPAD action plans", http://www.nepad.org/2005/files/documents/41.pdf.

and protection of wetlands and coastal areas. They are also closely associated with traditions and cultures. The forest sector accounts for 6 per cent of GDP on the African continent, which is the highest rate in the world.[12] Most rural households rely on wood fuel to cover their energy needs in sub-Saharan Africa.

18. Owing to increased wood collection, the clearing of forests for agriculture, excessive timber extraction, urbanization and conflicts, Africa is undergoing a severe process of deforestation. Resources allocated to forestry education and management are declining. Only 5 per cent of forests enjoy protected status. From 1990 to 2000, deforestation took place at a rate of 0.8 per cent per year, versus 0.2 per cent at the global level. The Democratic Republic of the Congo, the Sudan and Zambia accounted for about 44 per cent of this deforestation process.[13]

19. Among the actions to be considered to slow deforestation, the strengthening of national plans and programmes related to forests is crucial, as it permits the integration of all the stakeholders involved in the management and monitoring of forests. The strengthening of initiatives such as the Congo Basin Forest Partnership,[14] initiated by the United States of America to promote forest conservation while supporting livelihoods, as well as the forest programme of the NEPAD Environmental Action Plan, could contribute to slowing and eventually reversing this trend.

B. Biodiversity

20. Africa has a wealth of biodiversity. A quarter of mammal species and a fifth of bird and plant species are found on the continent, with a large number of them endemic to Africa. In addition, its wealth of fish species, numbering 2,000 or more, is thought to be unmatched anywhere else in the world. Most sub-Saharan species of plants and vertebrates are concentrated in a limited portion of the region. If well managed, this exceptional richness offers opportunities for improving human well-being.

21. In comparison with other regions of the world, African biodiversity has been well conserved. However, it is increasingly under threat as a result of the loss and fragmentation of natural habitat, as well as the overexploitation of resources. Pressures arise from the conversion of near-natural vegetation to permanent croplands, the replacement of forest by pastures, the expansion of human habitats, the alteration of river habitats and the pollution of water by various industries. Disruption of ecosystems through, inter alia, overlogging and overfishing (e.g., in areas such as Lake Victoria) reduces the resilience of many species, making the recovery of ecosystems difficult, if not impossible.

22. While Africa still has an important store of biodiversity, it has to cope with significant challenges regarding the monitoring and management of the various living species to which it is home. The improvement of research is crucial in order to determine sustainable extraction rates and practices. Furthermore, the reinforcement of national and regional institutions in charge of the management of these natural resources is a key component of the strategy to conserve biodiversity

[12] NEPAD, *Action Plan for the Environment Initiative*, 2003.
[13] UNEP, *African Environment Outlook*, 2007.
[14] http://www.cbfp.org/en/index.htm.

in the region, as is active involvement in multilateral environmental agreements. Similarly, local communities, including mountain communities, play an important role in preserving biodiversity, as recalled in the Johannesburg Plan of Implementation.

C. Water, drought and desertification

23. Africa is endowed with abundant water resources, which account for about 10 per cent of global freshwater endowments. There are over 50 internationally shared rivers and basins on the continent. Africa is relatively poor in groundwater, which represents only 15 per cent of its water resources, and in wetlands. Fourteen African countries, mostly located in the Sahel region and the Horn of Africa, experience water stress (less than 1,700 m^3 per capita per year) or water scarcity (less than 1,000 m^3 per capita per year).[13]

24. Freshwater is a key component of natural habitat and a necessary input for household consumption, industries, agriculture, hydropower generation, fisheries and tourism. Thus, water management is crucial for African development. As a result of climate change and variability, population growth, environmental degradation and resource mismanagement, access to freshwater is worsening in the region. Water bodies are being depleted and degraded due to overextraction, insufficient waste and wastewater management, industrial chemical releases and run-off of fertilizers and pesticides. Overgrazing and drought cause severe soil erosion and can lead eventually to desertification.

25. In line with paragraph 63 of the Johannesburg Plan of Implementation, African Governments have undertaken various initiatives with the support of the international community. Every African country has ratified the United Nations Convention to Combat Desertification, while numerous projects have been conducted on the ground to improve water governance, increase access to drinking water and limit the impact of human activities on bodies of water. In Zambia, the World Wide Fund for Nature, the Government and local communities have managed to restore a more natural flow regime below the Itezhi-Tezhi Dam to restore livelihoods and the environment.

D. Climate change

26. The climate in Africa is among the most variable in the world, partly on account of the continent's large size. According to the Intergovernmental Panel on Climate Change,[15] mean surface temperature in Africa is likely to increase more than in the rest of the world, with an estimated increase of 3 to 4 degrees Celsius by the period from 2080 2099 under the A1B scenario.[16] Drier regions are expected to warm more than the moister tropics. In 2050, annual rainfall is projected to have decreased in much of North Africa, the northern Sahara and Southern Africa and increased in tropical West and East Africa.

[15] Fourth assessment report, 2007.

[16] The A1 storylines and scenarios describe a future of very rapid economic growth, global population that peaks in mid-century and declines thereafter, and the rapid introduction of new and more efficient technologies.

27. The consequences of climate change are likely to be dramatic for the continent. The region is expected to suffer from a drop in agricultural productivity, leading to deteriorating food security conditions and increased risk of hunger. The projected agricultural productivity decline attributable to climate change in Africa could be in the 17 to 28 per cent range by 2080.[17] Additionally, climate change could adversely affect Africa through a rise in sea level. The number of people at risk from coastal flooding in Africa could rise from 1 million at present to 70 million in 2080.[13] As several large cities lie on or very close to the coast, economic values at risk can represent a significant percentage of national GDP, underlining the socio-economic vulnerability of African coastal States.

28. Access to freshwater is also expected to diminish. The majority of glaciers in Africa are under threat, and as precipitation becomes more erratic, natural run-off, river flow and water availability will also become more erratic. Besides, the consequences of climate change for health are likely to be overwhelmingly negative. Owing to poverty, armed conflicts, population displacements and underdevelopment of health infrastructure, African populations are particularly vulnerable to a number of climate-related diseases, such as Rift Valley fever and cholera.

V. Sustainable tourism

29. African countries have seen a large increase in the number of tourists they receive. In less than a quarter of century, their number has grown more than fourfold. Many African Governments have identified the potential of international tourism, which brought about $21.7 billion in revenue to African countries in 2005,[18] and promoting sustainable tourism development in Africa is a goal set out in paragraph 43 of the Johannesburg Plan of Implementation.

A. Conservation areas to promote ecotourism

30. A conservation area, which is a tract of land that has been awarded protected status, a nature reserve or a park, can sustain traditional livelihoods of local communities while fostering natural resource management. It can also attract tourists and generate income for the local communities and the Government.

31. Historically, the creation of conservation areas has constituted part of the national strategy of countries such as Kenya, South Africa and Zimbabwe to expand tourism activity. South Africa created its first national park, Kruger National Park, in 1926. The Government has steadily expanded the area of national parks, to 3.7 million hectares at present. Ethiopia, Uganda and the United Republic Tanzania, where tourism receipts represent a major source of income, exceeding 25 per cent of the total value of exports,[2] have followed this example.

[17] W. R. Cline, *Global Warming and Agriculture: Impact Estimates by Country* (Peterson Institute for International Economics, Washington, D.C., 2007).

[18] World Tourism Organization, *Tourism Highlights 2007*.

B. Respecting local traditions and cultures and enhancing local community benefits from sustainable tourism

32. The Johannesburg Plan of Implementation emphasizes in paragraph 70 the role tourism can play in the protection of wildlife and the sustainable development of local communities living in areas of great tourism potential. Through the generation of local employment and equitable schemes for rewarding habitat conservation and wildlife protection, these communities can share in the benefits from wildlife-related tourism. The financial inflows contribute to local welfare, limiting urban migration pressures and safeguarding traditional cultures.

33. In Africa, there are many experiences that highlight the positive impact of nature-based tourism on traditional communities. New forms of sustainable tourism, such as community-based tourism, have gradually expanded. Tourists can immerse themselves in the day-to-day lives of local and indigenous people while helping them to preserve their environment and cultural heritage. For example, in a Ugandan village called Buhoma, the local communities have managed to develop a high-quality community tourism product for tourists who visit Bwindi Impenetrable National Park.

34. The role of African Governments in sustainable community-based tourism is crucial, as an unstable economy and poor business environment constitute barriers to its development. Governments also need to overcome the constraints presented by insufficient physical infrastructure and education. Therefore, the promotion of community-based tourism is an integral part of a larger national strategy that encompasses other dimensions of sustainability, such as education and public health improvements.

C. Support for the conservation of Africa's biological diversity

35. Tourism has two contrary effects on the environment and biodiversity. On the one hand, the ecological footprint of this activity, which is estimated to represent 11 per cent of world GDP and to have involved international travel by 37.3 million tourists visiting Africa alone in 2005,[18] is significant. Also, the tourism industry and its associated infrastructure tend to be concentrated in biodiversity hotspots, where the variety of species is the highest. On the other hand, tourism can foster environmental preservation, especially if it is ecotourism. It may induce a better management of biodiversity through the provision of economic incentives to local communities and to Governments to protect habitat and wildlife. It may also substitute for more environmentally damaging activities.

36. African Governments have been active in the protection of biodiversity from an excess of tourism development. The creation of numerous parks and protected areas has illustrated the determination of countries to maintain their natural inheritance. Multilateral organizations have provided support to such initiatives, as illustrated by the technical and advisory activities of the World Tourism Organization in Africa. The United Nations Environment Programme (UNEP) has developed a useful methodology to assess the ecological footprint of tourism in the region.

VI. Infrastructure development

A. Transportation links

37. Transportation services contribute to development, and their improvement will be essential for Africa to achieve sustainable development and achieve the Millennium Development Goals. Access to transport permits mobility and favours commerce as well as education and health. It is also an important determinant of competitiveness, particularly in landlocked countries.

38. In many African countries, transport access rates and network quality are low by any standard. Only 12 per cent of sub-Saharan African roads are paved, versus 23 per cent in Latin America and the Caribbean, for example.[2] Fifteen African countries that have among the least developed road networks are landlocked. As a result, transportation costs are very high in the region. The median transport costs for trade within Africa are twice those for East and South Asia, accounting for a significant part of the poor export performances of African countries. Access to transport services appears to be particularly restricted in rural areas, contributing to the economic isolation and vulnerability of local communities.

39. In order to fill the transportation gap, many African countries have reformed the management of their infrastructure, with the creation of independent road agencies, for example. Transport activities have largely been deregulated, and related policies have been modified to permit market-determined decisions, enterprise autonomy and private participation. Furthermore, a more holistic approach has been implemented in transport management, with an effort to anchor transport sector strategies in poverty reduction programmes.

B. Energy infrastructure

40. The Johannesburg Plan of Implementation underlines the strategic role of energy infrastructure projects, calling for secure energy access for at least 35 per cent of the African population within 20 years, especially in rural areas. The social rate of return on energy infrastructure projects is very high — the highest among all types of World Bank infrastructure projects. Furthermore, energy access plays a major role in the industrialization process, as most primary transformation industries — steel, aluminium, paper, fertilizer — are energy-intensive activities.

41. Access to energy remains seriously deficient in sub-Saharan Africa. The electricity access rate as of 2005 was only 26 per cent overall and only 8 per cent for rural households.[19] Energy production tends to be costly, relying heavily on fossil fuels (about 80 per cent of electricity generation), despite significant untapped hydroelectric and other renewable energy potential. African power stations are often old, inefficient and in disrepair, leading to recurrent power shortages.

42. As energy shortages have become a major brake on development, African countries have initiated various projects at the national and continental levels. In its Infrastructure Short-Term Action Plan, NEPAD has identified 7 projects related to energy distribution and production among its top 20 priorities. These priorities, which are being translated into specific projects, encompass the creation of power

[19] International Energy Agency, *World Energy Outlook 2006*.

pools, the reinforcement of power interconnection and oil and gas pipelines, and the strengthening of regional cooperation through the African Energy Commission. Solar thermal and other forms of power based on renewable sources also have considerable potential in parts of Africa. At the community level, initiatives such as the Cows to Kilowatt project in Nigeria, demonstrate how small-scale initiatives can be developed to offset energy shortage: through the utilization of the methane produced by the degradation of abattoir wastes, the city of Ibadan and its partners expect to provide energy for 2,000 households in the neighbourhood. As a result of similar initiatives, progress has been made in access for the poor to energy for cooking and heating, as well as in electricity-grid interconnection.

C. Water storage and conveyance

43. Water management is a critical determinant of human settlements in many African countries. Most of Africa's continental landmass is classified as arid or semi-arid, and 60 per cent of the population lives in zones with mean annual run-off of 300 mm or less.[20] As a result, water scarcity affects African people in their daily existence, having tremendous consequences in terms of health and a significant economic impact, especially on agricultural productivity and hydroelectricity production.

44. Owing to the limited number of dams and deep wells, the capacity of local populations to collect and store water is restricted. Despite considerable resources, especially in the Congo River Basin, ECA estimates that less than 5 per cent of economically feasible hydropower potential is utilized. Besides, sanitation remains inadequate, causing illnesses and deaths, particularly among African children. The lack of water infrastructure also has major consequences for African agriculture.

45. The development of water infrastructure has been a priority of most African countries over recent decades. Many multilateral organizations have been involved in working towards the achievement of the Millennium Development Goals on water access. In Ethiopia, for example, the World Bank has launched the Ethiopia Water Supply and Sanitation Project, which is aimed at improving roughly 5,500 rural water-supply schemes serving 2 million people, and about 75 town water supplies serving 1 million people.

D. Digital divide

46. Telecommunications development offers tremendous opportunities in Africa. It facilitates technological diffusion, favours market transparency and reduces distance barriers between people. Recent innovations in the field of information technology (IT), particularly in Internet and mobile communications, offer the prospect of technological leapfrogging by African countries.

47. IT infrastructure remains underdeveloped in the region, as the penetration rate of telecommunications is only about 9 per cent and of the Internet only about 3 per cent.[21] If South Africa is excluded the penetration rates are much lower. However,

[20] Vörösmarty C. J., Douglas E. M., Green P. A., and Revenga C., "Geospatial indicators of emerging water stress: an application to Africa", 2005.

[21] http://www.internetworldstats.com/stats.htm.

the trends are favourable, with a large effort to increase equipment availability and improve telecommunications infrastructure in most African countries. From 2000 to 2004, the number of mobile phones per 1,000 inhabitants grew roughly fourfold, while the number of personal computers rose by 83 per cent and Internet usage in sub-Saharan Africa had increased steeply to about 24 million people as of 2005.[22]

48. African Governments have been very active in the reform of the telecommunications industry. Many operators have been privatized and the regulation of the sector has been reformed. Multilateral and regional organizations have been involved in the process, as shown by the effort of NEPAD to harmonize the various African IT policy and regulatory frameworks. Also, the private sector is playing a key role in the dissemination of IT, not only by providing the needed investments but also by developing solutions specific to the African context. Hence, major telecommunications service providers have developed microfinance services based on cell phone technology, which has proved very useful for the poorest in Africa, especially in the shanty towns and villages.

VII. Agriculture

A. Agricultural performance and food security

49. Agriculture remains an important economic sector in much of sub-Saharan Africa. It provides 57 per cent of all employment, though only about 17 per cent of GDP.[23] It also conditions the whole development process, as gains in agricultural productivity imply more labour supply and more effective demand for other industries. Furthermore, agricultural productivity determines the level of food security, which has major implications in terms of nutrition and health, peace and well-being.

50. However, African agriculture remains very fragile. Low soil fertility, scarce irrigation, poor rural infrastructure, insufficient rural finance and recurrent droughts are among the major challenges facing sub-Saharan African agriculture. As a result, food insecurity remains a major concern, with 24 sub-Saharan African countries requiring external food assistance at the beginning of 2007.[24] Between the period 1990-92 and the period 2001-03, the number of undernourished people increased by 37 million in sub-Saharan Africa, with an average under nourishment prevalence rate of 32 per cent in the latter period.[25]

51. Given the importance of agriculture in African development, agricultural modernization has been recognized as a top priority by the international community. The Johannesburg Plan of Implementation stressed in paragraph 67 the crucial role of agricultural productivity and sustainable production in achieving food security in Africa. The rate of real agricultural output growth in sub-Saharan Africa increased markedly in recent years, from just over 2 per cent per year in the 1980s to about 3.75 per cent from 2000 to 2005.[2] At the regional level, ambitious projects have

[22] World Bank Africa Database, 2005.

[23] Statement of the Director-General to the twenty-fourth FAO regional conference for Africa, 2006.

[24] FAO, *Crop Prospects and Food Situation*, 2007.

[25] FAO, *State of Food and Agriculture 2005*.

been launched, as illustrated by decisions of the Abuja Fertilizer Summit and the commitment by African Governments to spend a minimum of 15 per cent of their annual budgets on agriculture.

B. Arable land, agricultural potential and the role of agricultural research and development and extension services

52. African soils are diverse but characterized by limited fertility. Only 45 per cent of the lands is arable, 16 per cent has soil of high quality and about 13 per cent has soil of medium quality. Likewise, new high-yielding crop varieties are scarce, though the diffusion of available ones has begun to accelerate. Genetically modified crops are currently grown commercially only in South Africa.

53. Poverty and demographic pressures have played a major role in the current state of soils and land in Africa. As fertilizers and mechanization remain out of reach for many African farmers, traditional cultivation techniques are still in use. Farmers tend to clear land, grow a few crops and then move on to clear more land, leaving the land fallow to regain fertility. However, owing to growing food demand, the fallow period has grown shorter and the period of cultivation longer, which thins soils and reduces fertility. Insufficient irrigation has worsened the situation, leading to an even more extensive exploitation of soils.[26]

54. The current pattern of agricultural development in Africa is unsustainable. A large share of the population remains undernourished, and the degradation of land and ecosystems worsens food insecurity. Therefore, easing the access of African farmers to improved crop varieties, fertilizers and, where feasible, irrigation deserves priority attention. Fertilizers alone are estimated to have contributed as much as 50 per cent of the yield growth in Asia during the Green Revolution.[27] Improved tillage and land management practices can also help halt land degradation.

C. Land tenure and rural credit availability, including gender equity

55. The way property rights are defined and enforced is crucial to the way land and other natural resources are utilized. There is an incentive for farmers to invest in land if land tenure is clearly defined and ownership or use rights are legally protected. Likewise, access to credit is an essential determinant of agricultural investments. Restricted access does not allow farmers to undertake needed investments to boost productivity.

56. Land tenure takes diverse forms in Africa. However, many countries are still characterized by land tenure arrangements in which property rights are not clearly defined. This tends to hamper agricultural credit by preventing the use of land as collateral. Furthermore, customary land tenure arrangements generally restrict the access of women to land ownership, even when they may be the principal farm managers in the household. More positively, land ownership in sub-Saharan Africa tends to be more equitably distributed than, for example, in South Asia. Thus, if a

[26] Meanwhile, fertilizer use per hectare in Africa is less than 10 per cent of the world average.

[27] W. D. Hopper, "Indian agriculture and fertilizer: an outsider's observations", keynote address to the Fertilizer Association of India seminar on fertilizer and agriculture, New Delhi, 1993.

green revolution should take hold in Africa in the near future, the benefits could be quite widely shared.

57. Beyond ownership of land and other physical assets, access to formal rural credit depends on the presence of financial institutions in rural areas and their use for savings by rural households. In Uganda, households without savings accounts were significantly less likely to apply for credit than those with accounts.[28] Largely on account of low savings rates and low utilization of the formal banking system, credit institutions are underfunded and cannot support the modernization of agricultural production.

58. The reform of land tenure is likely to have the greatest impact when pursued in association with the modernization of the financial system in rural areas. In this context, expanded and strengthened microcredit institutions can provide an effective support to agriculture in the poorest areas and can contribute to greater gender equity.

D. Livestock and fisheries development programmes

59. Livestock and fisheries are major sources of food for African people. The livestock subsector accounts for more than half of the agricultural capital stock, while fishing activities employ roughly 2.7 million people on either a part-time or a full-time basis.[29] Livestock and fish provide a large share of the protein, minerals, vitamins and micronutrients in African diets.

60. As a result of economic and environmental constraints, fishing and livestock raising have failed to keep up with the growing African population. For example, per capita fish consumption over the last two decades has decreased by an average of 2.1 kg per person per year, and marine fish imports have increased by 177 per cent during the same period.[29] Also, between 1990 and 2005 per capita meat production fell in 30 out of 47 sub-Saharan African countries for which data of the Food and Agriculture Organization of the United Nations (FAO) are available.[30] As underlined in the Comprehensive Africa Agriculture Development Programme, constraints are multiple, ranging from technical issues to policy factors. Excessive government regulation, insufficient research efforts and animal health services, and poor market infrastructure all contribute to the stagnation of production.

61. In order to stimulate growth in fishing and livestock production, African countries have undertaken a number of initiatives. They have requested that the NEPAD Steering Committee undertake a comprehensive review of the potentialities and constraints specific to those sectors. Dialogue among the various stakeholders of the fishing industry has been promoted through initiatives such as the 10-year Fish for All initiative, launched in 2002, and the donor-supported, FAO-executed Sustainable Fisheries Livelihood Programme in West Africa.

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[28] I. Kasirye, "Rural credit markets in Uganda: evidence from the 2005/6 national household survey", presented at African Economic Conference, September 2007.

[29] FAO, *State of World Aquaculture 2006*.

[30] Calculated from FAO production database and World Development Indicators population statistics.

VIII. Conflict management and peacebuilding

A. Incidence and impact of armed conflict in Africa

62. Many African countries have been plagued by wars since their independence. Despite a decrease in the number of countries involved and casualties suffered, the continent is still a place where armed conflicts are frequent and devastating. In 2004, more than 14,000 Africans lost their lives as a result of armed conflicts.

63. While the causes of conflicts are diverse in nature, they all adversely affect the development process. They generally result in population displacement and the disruption of public services. Compared to peaceful African countries, African countries in armed conflict have, on average, a 50 per cent higher rate of infant mortality; 15 per cent more undernourished people; life expectancy that is five years shorter; 20 per cent more adult illiteracy; 2.5 times fewer doctors per patient; and 12.4 per cent less food per person.[31]

64. In the context of armed conflicts, the international community is involved in providing humanitarian relief to civilians. Neighbouring countries and regions are often committed to host displaced populations. International organizations, especially the Office of the United Nations High Commissioner for Refugees (UNHCR), play a critical role in structuring and coordinating the support for these populations. At the end of 2006, UNHCR was providing support to 5.4 million internally displaced people in Africa.[32]

B. Building peace

65. The Johannesburg Plan of Implementation emphasizes in paragraph 65 that conflicts in Africa have hindered efforts for sustainable development. Armed conflicts inhibit African development, as they undermine health and education, destabilize democratic institutions and cause economic contraction. Vigorous post-conflict reconstruction is crucial to consolidating peace. This generally requires substantial improvements in governance, with greater respect for people's rights and a better integration of all stakeholders in decision-making. Similarly, efficient economic governance plays a critical role in peacebuilding, notably in the form of efficient management and equitable distribution of public revenues from natural resources.

66. An institutional framework for peace management is taking shape under the auspices of the African Union. In this framework, the notion of common threats is defined, encompassing inter-State and intra-State conflicts. The principles for action are specified, including the key principle of the indivisibility of African security. The responsibility for the implementation of security policy and actions lies exclusively with the Peace and Security Council of the African Union, which approaches peacemaking and peacebuilding through mediation, consultation and dialogue.

[31] Oxfam, 2007, "Africa's missing billions".

[32] UNHCR, statistical online population database, http://www.unhcr.org/statistics/45c063a82.html.

IX. Regional and international community engagement

A. African trade policy concerns and priorities

67. In 2001, the member States of the World Trade Organization agreed to launch the Doha Development Round. While previous rounds of negotiations concerned mostly developed countries, the Doha round could have major implications for African countries. The latter expect that agricultural liberalization, with the elimination of export subsidies and dramatic cuts in domestic supports and tariff barriers, would give a significant impetus to their development.

68. Yet African countries have concerns about the negotiations. With trade liberalization, they will lose part of the benefits associated with preferential tariffs in developed-country markets. More importantly, they often face supply-side constraints and difficulties in complying with the sanitary and technical regulations applied on international markets. Besides, the liberalization of their own markets could have a significant fiscal impact, as most of their public resources come from tariff revenues.

69. African economies are engaged in the bilateral liberalization of their trade with European countries, which grant them preferential tariffs. This process, which should result in the signature of free trade agreements between the European Union and the African countries as soon as 2008, may not have a positive impact on African economies. As most African imports come from developed countries, such bilateral liberalization is likely to reduce significantly public revenues in Africa while increasing the competition from firms located in the developed countries.

B. Foreign direct investment and indebtedness

70. Capital inflows play a major role in the development process. Coupled with a solid level of national saving, they permit the capital accumulation needed for industrialization. However, African economies attract a relatively small share of global FDI, less than 3 per cent in 2006.[33] Besides, FDI is allocated mostly to commodity-extracting industries and more rarely to utilities and manufacturing.

71. In the meantime, many African countries have been trapped in a vicious circle of indebtedness. Confronted with insufficient tax revenues and local saving and erratic commodity prices, some African Governments have had to rely on external borrowing to fund their budgets. This proved unsustainable after the mid-1980s, when real interest rates rose steeply and international banks reduced drastically their lending to African Governments.

72. The balances of payments of African countries have significantly improved over the past few years[34] thanks to a more favourable macroeconomic context, improved governance and the renewed interest of developed country investors in developing country markets, in particular in Africa. Many African Governments

[33] In 2006, African economies attracted $38.8 billion out of $1,230 billion according to UNCTAD.

[34] The external current account deficit (excluding grants) was reduced from 3.6 per cent (1997-2002) to 0.1 per cent of GDP (2006) in sub-Saharan Africa (IMF).

have reformed their banking industries and investment codes.[35] At the multilateral level, various initiatives were taken to make African indebtedness more sustainable. The Heavily Indebted Poor Countries Initiative was initiated by the International Monetary Fund (IMF) and the World Bank in 1996, providing debt relief and low-interest loans to reduce external debt repayments to sustainable levels.

C. Development cooperation

73. International cooperation involves a number of partners — Governments, civil society and international organizations — and affects many dimensions of Africa's sustainable development. It tends to make up for a shortage of financial resources, funding long-term projects that can be vital for the poorest African economies. Investments in infrastructure and utilities are hence priority projects for international cooperation in Africa, as they condition long-term growth in the region. Donors also get involved in other projects with high social returns, such as microlending projects.

74. With $39.9 billion in official development assistance (ODA) in 2006,[36] sub-Saharan African countries are the main beneficiaries of international cooperation. In the least developed African countries, ODA usually accounts for a large share of the gross national income (GNI), representing, for example 47 per cent of the GNI of Burundi in 2005. ODA per capita for sub-Saharan Africa rose from $20 to $44 from 2000 to 2005.[2] Still, ODA flows are far below this level of developed-country commitments and the targets set at Monterrey in 2002.

75. African Governments and their partners have been eager to improve international cooperation as a means to tackle poverty and foster sustainable development on the continent. In many African countries, local administrations have substantially reinforced their international partnerships and improved the monitoring of projects funded by external donors. At the multilateral level, United Nations Member States have reiterated their willingness to reinforce their support for African countries through international cooperation, as recalled at the Group of Eight Gleneagles Summit in 2005. International donor organizations have improved and often simplified the rules related to the conditionality of development assistance in order to reduce the administrative burden on recipients.

D. Transfer and development of technology

76. The improvement of technology transfers to African countries has been recognized as a priority by the international community, as recalled by the Monterrey Consensus and the Johannesburg Plan of Implementation. Hence, various initiatives have been launched to reduce the technological gap between African countries and their developed partners. At the World Trade Organization, the Agreement on Trade-Related Aspects of Intellectual Property Rights has been

[35] They have privatized a large number of sensitive industries, such as telecommunications providers, attracting multinational firms to the continent. Thus, a total of 142 companies, valued at $13.7 billion, were privatized in Africa from 2000 to 2005, according to the World Bank.

[36] Most of the net ODA increase since 2000 has been attributable to debt relief (see http://www.oecd.org/dataoecd/7/20/39768315.pdf).

adjusted to make essential drugs available to developing countries at lower prices to address pandemics that devastate their populations.

77. Technology transfer helps developing countries to catch up with their developed partners. In a highly competitive world, African industries can remain cost-effective if their technology is up to date. In agriculture, the role of technology transfer is crucial, as many African countries have not achieved a technological revolution comparable to Asia's Green Revolution and need innovation to cope with their specific agro-climatic constraints. Similarly, research and the dissemination of technology greatly affect public health on the continent, notably through vaccines and medicines to treat tropical diseases.

78. Many African countries encounter difficulty in gaining access to technology. The price of patents, which is defined in countries where standards of living are much higher than in Africa, is often out of reach for African firms. Similarly, imported medicines in Africa are very costly, in contrast to the situation in countries such as India, where generic drugs are locally manufactured and sold at relatively low prices. In the same vein, the relatively limited presence of multinationals, through which significant technology transfers can occur, does not work in favour of technological dissemination in the region.

E. Regional integration

79. The international community has recognized the importance of regional trade for sustainable development (see Johannesburg Plan of Implementation, para. 67 (d)). Integration is expected to contribute to more sustainable development, based on economic growth, trade, cultural exchanges and peace, as recognized by the Lagos Plan of Action of 1980 and the Abuja Treaty of 1991. Through the creation of customs unions and, ultimately, the integration of monetary and industrial policies, African Governments aim to foster regional trade, stimulating regional competition and sparking the industrialization process. Regional integration is also expected to reduce the vulnerability of African economies to external shocks and optimize the management of resources. At the political level, regional institutions such as the African Union and the New Partnership for Africa's Development play an active role on the continent, framing a more sustainable environment for dialogue and cooperation.

80. Yet, despite the political support of African leaders, the regional integration process has not achieved the goals set at the beginning. Thus, the implementation of the Arusha Agreement has been significantly delayed. The integration of regional trade remains limited, as regional commerce accounts for a small share of total African trade. Furthermore, the regional economic communities are still hampered by insufficient resources and institutional inconsistency, with overlapping State memberships.

81. In order to reinvigorate the regional integration process, African Governments have taken various steps. They have initiated the rationalization of the work programmes of the regional economic communities. They have also reinforced the competencies of those communities, as evidenced in the trade negotiation area. In the security field, the role of the African Union has been strengthened with the Durban agreement, by which the Peace and Security Council was created in 2002,

and various peacekeeping missions have been deployed in the region (see sect. VIII above).

F. Sustainable consumption and production patterns

82. Following the decision at the World Summit on Sustainable Development in Johannesburg in 2002 to develop a 10-year framework of programmes for sustainable consumption and production and the launch of the Marrakesh Process in 2003, the African Ministerial Conference on Environment approved the African 10-Year Framework Programme on Sustainable Consumption and Production through its Dakar Declaration in March 2005. The programme identifies four priority areas, all of them considered in the context of the NEPAD Environmental Action Plan and regional poverty reduction priorities: energy, water, urban development (including municipal waste management) and industrial development. The programme is aimed at strengthening existing institutional structures to promote sustainable consumption and production and supporting specific related projects. To support implementation, the Marrakesh Task Force on Cooperation with Africa has been established.

X. Continuing challenges

83. African countries are facing multiple challenges that are difficult to manage simultaneously. As recalled during the Millennium Summit, the alleviation of poverty and gender imbalances and improvements in health and education are critical for African long-term development. However, the implementation of related policies is constrained by numerous impediments.

84. Besides pandemics such as HIV and malaria and widespread armed conflicts, African countries have to deal with economic structures that trap them in underdevelopment. Hence, the reinforcement of energy and transport infrastructures appears critical for the development of the region. Owing to low productivity, agriculture absorbs most resources available in the region, to the detriment of industries. Improving access to fertilizers, technologies and irrigation is needed to increase output and productivity. Diversification into higher-value crops and agro-industries can reduce the vulnerability of African economies to the erratic prices of commodities. Insufficient transparency and limited capacity in the management and investment of the revenues derived from natural resources remains a key obstacle on the road towards sustainable development in Africa.

85. The conservation of natural resources is another major challenge for Africa and the world as a whole. The protection of the environment does not necessarily combine easily with extreme poverty and demographic pressures. The rapid pace of deforestation often results from the food and energy needs of populations trying to survive. Awareness and education about the value and methods of sustainable natural resource management and of biodiversity conservation could be improved. As climate change will become a major obstacle on the road towards sustainable development, a major adaptation effort will be needed from many African countries, with support from the international community.

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Thematic cluster for the implementation cycle 2008-2009 — review session

Integrated review of the thematic cluster of agriculture, rural development, land, drought, desertification and Africa in small island developing States

Report of the Secretary-General

Summary

This report reviews the status of progress in small island developing States towards implementation of the Mauritius Strategy, with specific focus on agriculture, rural development, land, drought, desertification and Africa. The report is prepared in fulfilment of the mandate of the Commission on Sustainable Development at its thirteenth session, whereby a special one-day session on small island developing States will be convened by the Commission during its review sessions, to consider progress towards the sustainable development of small island developing States, within the framework of the thematic cluster under review by the Commission.

The report also describes continuing challenges which the small island developing States face in their effort to advance implementation of the Mauritius Strategy as a basis for consideration of the way forward.

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I. Introduction

1. It will be recalled that the Commission on Sustainable Development, at its thirteenth session, decided that it would devote one day of its review sessions to considering the status of implementation of the Mauritius Strategy for the Further Implementation of the Programme of Action for the Sustainable Development of Small Island Developing States, with specific emphasis on the thematic cluster of issues under review by the Commission.

2. In this regard, the present report has been prepared in pursuance of the Commission mandate that the Secretary-General submit to its review session a report outlining the progress, continuing challenges and constraints faced by small island developing States in their effort to achieve sustainable development, giving focus to the issues of agriculture, rural development, land, drought, desertification and Africa.

3. The report provides a comprehensive review and analysis of the efforts of small island developing States to address this thematic cluster of issues within the context of implementation of the Barbados Programme of Action for the Sustainable Development of Small Island Developing States, the Johannesburg Plan of Implementation and the Mauritius Strategy for the Further Implementation of the Programme of Action for the Sustainable Development of Small Island Developing States, and relevant decisions of the Commission on Sustainable Development.

4. This report was prepared based on information taken, inter alia, from national data sources, reports of relevant United Nations specialized agencies, notably the Food and Agriculture Organization of the United Nations, the United Nations Conference on Trade and Development and the United Nations Environment Programme, from the assessments of regional intergovernmental and technical agencies, and from the inputs of major groups.

5. Review of the thematic cluster of issues is undertaken with full cognizance of their interdependent relationship in small island developing States, given their size, limited land and narrow natural resource bases, and the fragility and interdependence of their terrestrial and coastal ecosystems. It is impossible to consider the challenges in sustainable land management in small island developing States without taking into account the issues impacting rural development and agriculture. Similarly, the issues of drought and desertification are addressed integrally within the discussion on land, rural development and agriculture. It should also be noted that the challenges affecting Africa are taken into account within the context of the review of the ongoing challenges faced by the six African small island developing States. Such assessment is incorporated in the overall presentation.

6. Their structural and environmental vulnerability, exacerbated by the varied impacts of climate change, including the increased frequency and intensity of extreme weather events, are also addressed, given their direct influence on the thematic issues under review.

II. The Mauritius Strategy mandate

7. The Mauritius Strategy for the Further Implementation of the Programme of Action on the Sustainable Development of Small Island Developing States, adopted

in 2005, issued critical mandates to assure the attention of the small island developing States to and the support of the international community for measures to protect the land resources of small island developing States and to promote their prosperity through growth and trade in agriculture.

8. In this regard, the Mauritius Strategy invites the small island developing States to work with the international community to develop capacity for sustainable land management and self-generating agro-ecosystems and to strengthen land tenure and enhance land-use planning for crop, livestock and aquaculture production, taking into account increased competition for land resources resulting from tourism, urbanization and other activities.

9. The Strategy also addresses the promotion of agricultural competitiveness through the long-term development of efficient agricultural systems, diversification and value-added activities that ensure food security and self-reliance; specific trade and development-related needs with attention to marketing, product development and quality control and addressing urgent issues such as erosion of preferences and trade and food security; the development of capacity for trade facilitation and niche marketing in agriculture, forestry and fisheries products; improvement of infrastructure related to sanitary and phytosanitary measures; strengthening of technical and financial capacity for effective monitoring and control of fishing vessels and the sustainable management of fisheries.

10. Mandates for action include addressing the linkages between tourism and agriculture for promoting food supply chains, rural hospitality and agrotourism; developing sustainable forest management practices and the implementation of measures to protect against invasive alien species; the strengthening of policy and legislation formulation in the mining sector; and the promotion of research and implementation of modern technologies for more effective management of land resources. Small island developing States have taken steps to address some of these mandates.

11. A summary account of these efforts is given below.

III. Sustainable land management

A. Impact of population growth and development

12. Effective land management remains a central and increasingly important challenge faced by all small island developing States. Small in land size with only a few exceptions, small island developing States must balance the competing demands for use of their limited land resources brought on by expanding economic activities, burgeoning population growth, and ever-increasing demand for human settlements. This challenge is greatest in the coastal areas where the principal economic activities in small island developing States are concentrated, and where by corollary the majority of populations live. The movement of rural labour in search of more productive, urban-based employment has also been a dominant demographic trend in nearly all small island developing States. In the Atlantic, Indian Ocean, Mediterranean and South China Sea countries, annual urban growth rates often exceed 2 and 3 per cent, while annual rural growth rates have generally declined to under 1 per cent. Similar trends are also found in the Caribbean, where rural growth

rates are negative. In the Pacific Islands, urban demographic expansion is outpacing population growth in rural areas and in the outer islands.[1] This demographic shift has increased the need for urban housing, services and infrastructure. The topography of small island developing States, which are more mountainous in the interior and tend to have most of their flat, arable land along the coastal strip, encourages these demographic trends.

13. Both land and marine ecosystems along small island developing States coasts have thus been faced with increasing stress from growing human settlement demands and from the impact of expansion in the agriculture, fisheries and tourism industries, in particular. In many coastal areas, industrial development and growth in hotels and other tourism-related services have outstripped local capacity to provide municipal services. This has increased demand for more effective solid waste management, due in part to the rising incidence of improper municipal and industrial waste disposal and the dumping of untreated sewage in coastal waters. Untreated sewage, agricultural runoff and industrial waste are acknowledged to be principal causes of nutrient pollution of small island developing States coastal waters.

14. As competition for land space has grown, there has been increased encroachment on still more ecologically sensitive and disaster-prone areas, such as the marginal lands on steep hillsides in the hinterland of major coastal towns. Such growth is often unplanned, taking the form of squatter communities lacking municipal infrastructure. The inappropriate clearing of these hillsides for housing, quarrying, cultivation and fuel has resulted in increased rates of deforestation and watershed degradation, which have in turn accelerated soil erosion and increased the instability of these lands. Heavy siltation of rivers during rainfall, decline in soil fertility and increased incidence of landslides are among the constant reminders of deforestation and watershed degradation in small island developing States. Land degradation is severe in some small island developing States. It is estimated that Haiti loses 36 million tons of soil each year,[2] while Nauru reports nearly 70 per cent of its land space degraded by phosphate mining.[3]

15. These challenges are rendered even more complex when taking into account the size of these Member States; inland and coastal ecosystems are in such close proximity that their needs must be addressed in an integrated manner. For instance, topsoil run-off carries agricultural chemicals and pesticide residue into coastal waters via rivers, while polluted groundwater from inappropriate sewage and waste disposal also empties into the sea, contributing to eutrophication of coastal waters and to the loss of coral reefs and marine life.

16. Such circumstances negatively impact the quality of life of small island developing States communities. On Upolu Island in Samoa, for example, recorded declines in inshore fish catches have been linked to sedimentation of reefs as a result of deforestation and watershed mismanagement.[4] The health and environmental impacts of agro-chemical, sewage and industrial effluents on soils, potable water and food supplies are also significant. In Mauritius, average annual use of fertilizer has been estimated at 600 kilograms per hectare, more than five

[1] *World Urbanization Prospects: the 2005 Revision Population Database.*

[2] Haitian Country Report to FAO (2001).

[3] Nauru (2003), first national report to United Nations Convention to Combat Desertification.

[4] UNEP (2004c).

times the world average of 113 kilograms per hectare.[5] This significant exposure to agrochemicals has resulted in contaminated run-off and compromised aquifers, soils and coastal waters.[6]

B. Other factors impacting land quality

17. Deforestation rates are also high in some small island developing States. Decline in the coverage as well as the quality of forests has undermined their natural capacity to buffer against extreme weather events, and the lack of vegetation cover has increased the severity of natural disasters. Landslides and floods, which killed over a thousand Haitian nationals following heavy rains in 2004, typify the vulnerability of small island developing States in this regard. The growing frequency and severity of hurricanes and cyclones in small island developing States regions has also increased the need for risk management, particularly for housing built on unstable lands.

18. Land degradation also threatens biodiversity conservation in small island developing States. It is estimated that in Cape Verde, a country with high levels of land degradation, 10 out of 28 indigenous species have been lost to desertification.[7] In many Caribbean countries, marine biodiversity is increasingly endangered by coastal development and mangrove destruction. In the Pacific, the clearing of indigenous vegetation has made some States more vulnerable to invasive species, which are now a significant driver of population declines and species extinction in small island developing States, bringing direct and indirect harm to the environment, human health and the economies of these States. Examples include fire ants in the Caribbean and the golden apple snail in the Pacific, both harmful to humans; the displacement of 60,000 sooty terns, a premier attraction on Bird Island in Seychelles, by the yellow crazy ant; and agricultural losses in Grenada valued at some $18.3 million from damage caused by the pink hibiscus mealybug.

19. The integrated management of agricultural lands, forests and trees outside forests to protect land, coastal areas, freshwater resources and biodiversity has increased the resilience of small island developing States to storms and high tides. Many small island developing States have also incorporated disaster planning into their natural resource management schemes. In the Caribbean, a comprehensive disaster management framework to guide planning and decision-making at the national level was prepared by the Caribbean Disaster Emergency Response Agency, which offers technical support for disaster management planning for countries in the region. Many of its member States have begun implementation of capacity-building initiatives to integrate disaster management into land management and development planning processes.

20. Deforestation and inappropriate land use practice in small island developing States has also adversely affected groundwater recharge and water retention capacities of soils, directly contributing to the loss of rivers, decreased rainfall, watershed degradation and decline in freshwater sources. Conversion of forestlands has threatened the sustainability of food security in many countries. Topography and climactic factors also influence the susceptibility of small island developing States

[5] Indian Ocean Commission (2004).

[6] UNEP (2004a).

[7] UNDP; see http://www.undp.org/gef/05/portfolio/writeups/bd/capeverde.html.

to drought and to desertification. Some countries, like Barbados, Cape Verde, Kiribati and Tuvalu, have chronically limited freshwater resources, low annual rainfall and shallow water tables. Water management programmes that promote capture and storage, conservation, and sustainable use, especially for agriculture, have been integral to meeting local water needs for both domestic and commercial use. Some of these Member States have been working to develop and implement comprehensive water management strategies that include technologies for improving irrigation, groundwater extraction and rainfall catchment.

21. Climate change has also had substantial impact on the health of small island developing States coastal ecosystems. Warming seas have resulted in widespread death of reefs due to coral bleaching. Substantial beach erosion from both reduced reef protection and from sea level rise has thus brought increasing loss in coastal land space. In the case of low-lying small island developing States such as the Maldives, Marshall Islands and Tuvalu, the threat of total submersion of land area from rising sea levels is very real.[8] As recently as January 2008, King Tides rising to three metres washed across the islands of Tuvalu, whose highest point is just over 4.5 metres.[9] Salt-water intrusion in the freshwater aquifers of Pacific small island developing States is an increasing phenomenon. There have also been several reports of increased soil salinization in small island developing States across all regions. These trends seriously impact soil fertility, the productivity of land resources and food security.

C. Integrated land planning and management

22. Small island developing States have been giving increased attention to the implementation of policies in an effort to address challenges associated with rapid urbanization and with the expansion of tourism activities, often on prime agricultural lands. There is need for a more centrally coordinated approach to zoning, urban planning and service provision, and for integrated rural development plans, to retain land for agricultural use, and for environmental watershed protection schemes. Land tenure systems vary considerably among small island developing States regions. In the Pacific, the laws and institutions governing land management and rural development are closely linked with local culture and custom. Land stewardship is guided largely by tradition, religion and a variety of indigenous practices. Local chiefs and officials and leaders of extended family groups and of villages have primary responsibility for the development of customary lands. More than 80 per cent of Pacific small island developing States lands are owned on the basis of customary law, with a much smaller proportion of territory administered at the national level. Many Pacific small island developing States are thus exploring more decentralized land administration systems, the institution of local land courts, and technology-driven registration systems.[10] Still, very few have developed land use policies, and land tenure conflict is a continuing challenge.

23. In the Caribbean and Atlantic, Indian Ocean, Mediterranean and South China Sea regions, attention is being given to land distribution issues through policy

[8] UNEP (2004a).

[9] Shuckman, David (2008).

[10] Country reports prepared for the FAO/USP/RICS Foundation South Pacific Land Tenure Conflict Symposium, 10-12 April 2002; http://www.sidsnet.org/pacific/usp/landmgmt/SYMPOSIUM/.

reform. There is acknowledged need for effective land registration systems, to reduce the challenges related to titling and ownership. Caribbean leaders, in the context of their regionally agreed programme to revitalize agriculture, termed the Jagdeo Initiative, committed to taking steps to assure the poor better access to land resources.[11] Many States are exploring the use of information-based technology such as geographic information systems, to support more solution-based analysis and decision-making in respect of spatial planning, and to ensure optimum use of lands. Preparation or review of land reform policy is being undertaken in a number of States, including Jamaica, Saint Vincent and the Grenadines and Seychelles; a watershed management policy has been introduced in Haiti.

24. National decision-making and the capacity to manage land resources sustainably in small island developing States would benefit from appropriately trained personnel in such fields as physical and urban planning, and spatial data mapping and planning. Most small island developing States are also constrained by weak institutional capacity and inadequate legislative and regulatory frameworks for coordinated management and monitoring of their land resources. These are challenges to be overcome if there is to be improved access to information on land resources and appropriate tools, best practices and technologies for implementing sustainable land-use options and making informed policy decisions.

IV. Rural development

25. Rural development is integral to sustainable development in small island developing States, since the majority of these States, notwithstanding their respective levels of development, continue to rely heavily on the rural sector for the provision of income, employment and food security for their populations. Table 1 shows the importance of the agricultural sector to employment in selected small island developing States. In the Atlantic, Indian Ocean, Mediterranean and South China Sea and Pacific regions, between 30 and 80 per cent of the total population live in rural areas, relying mainly on agriculture, forestry and fisheries for their livelihood. Agriculture is the predominant productive sector for most of these States, accounting for 20 to 40 per cent of gross domestic product, over 50 per cent of exports and 40 to 80 per cent of employment opportunities. Fishing has been a particularly important source of income in the Atlantic, Indian Ocean, Mediterranean and South China Sea and Pacific regions. In the Federated States of Micronesia, Maldives, Seychelles and Tuvalu, for example, fisheries exports comprise over 90 per cent of agricultural exports.[12]

[11] Caribbean Regional Agriculture Policy Network; see http://www.carapn.net.

[12] FAO FishStat (2004).

Table 1
Percentage of workforce employed in agriculture, industry and service sectors: selected small island developing States

	Percentage		
Country	*Agriculture*	*Industry*	*Services*
Antigua and Barbuda	2.60	14.60	74.60
Barbados	3.30	17.30	69.70
Cuba	21.20	19.40	59.40
Dominica	21.00	22.00	58.80
Dominican Republic	14.60	22.30	63.10
Grenada	13.80	23.90	58.60
Guyana	27.90	22.60	47.90
Haiti	50.50	10.80	38.70
Jamaica	18.00	17.70	64.10
Mauritius	10.00	32.40	57.40
Papua New Guinea	72.30	3.60	22.70
Sao Tome and Principe	27.90	19.20	52.40
Saint Lucia	11.40	17.70	56.10
Saint Vincent and the Grenadines	15.40	19.60	60.60
Trinidad and Tobago	4.30	31.00	64.30

Source: ILO, Key Indicators of the Labour Market; see http://www.ilo.org.

26. The Caribbean small island developing States economies are dominated by the service sector, particularly tourism, banking and finance, with incipient industrial development. The rural sector in this region includes a greater contribution of non-agricultural economic activity, including tourism, mining and oil drilling, as well as commercial micro-enterprises and cottage industries linked to the tourism sector. This diversity notwithstanding, the contribution of agriculture to the gross domestic product in the Caribbean ranges from 3 per cent in Trinidad and Tobago to 31 per cent in Guyana, employing as much as 66 per cent of the workforce in the case of Haiti.

27. Poverty is a predominantly rural issue in small island developing States. The agricultural sector in most small island developing States is characterized by a combination of large-scale commercial production of export crops and a small-scale sector which produces food crops primarily for local consumption. The rural poor tend to be subsistence and small farmers, women and artisanal fishers, for whom the agriculture sector remains a primary source of income and food security. Factors such as inadequate physical infrastructure and services, limited access to technological and financial resources, vulnerability to natural disasters and economic shocks have served to retard the development of rural economies in small island developing States.

A. Challenges to rural development

28. The erosion of preferential trade arrangements on major export products like sugar and bananas as well as repeated devastation by hurricanes and cyclones in the Caribbean and the Pacific have resulted in significant contraction of the agrarian sector and the undermining of rural development in countries like Dominica, Fiji, Grenada and Saint Lucia. Subsistence farming has also taken its toll on the forestry sector, particularly in the small island developing States which are also least developed countries where there is heavy demand for wood fuel and land for cash crops. Recorded deforestation is highest in the Comoros and Haiti.

29. Rapid population growth and youth disenfranchisement are increasing challenges in the rural sector. In the Pacific, nearly 40 per cent of the rural population is below the age of 15, and job creation has not kept pace with population growth.[13] Access to land is also a major concern. Historically, subsistence farmers have had access only to marginal lands, and generations of informal land ownership have resulted in land titling difficulties, undermining the ability of subsistence farmers to access loans for small farm development. These are problems disproportionately faced by women, who represent the greater proportion of the rural poor. This is of particular concern given the rising level of female-headed households in small island developing States. More attention is therefore being given to programmes to enhance employment opportunities for women and youth in rural areas. Programmes that provide micro-credit to women raise employment and living standards for families and in some cases effect change for entire rural communities.

30. The multi-island character of most small island developing States in the Atlantic, Indian Ocean, Mediterranean and South China Sea and Pacific regions adds a unique dimension to the challenge of rural development. The quality of life for populations on remote outer islands is of particular concern, because distance renders the delivery of services more difficult and expensive, thus inflating costs associated with strengthening the rural economy. It is estimated, for example, that 70 per cent of the Pacific small island developing States populations do not have access to modern energy services and that, as a group, they pay between 200 and 300 per cent above global market prices for fossil fuel. These are burdens that fall heavily on the rural poor.[14] Physical dispersion also makes the delivery of other basic services such as health care very difficult, and access to markets for trade more expensive. These challenges have contributed substantially to increasing trends of rural-urban drift in small island developing States.

31. There has been increasing attention given to strengthening agro-industry and the non-agricultural productive activities in the rural sectors of small island developing States as part of the overall strategy to promote rural development. For a few small island developing States, mining operations have contributed meaningfully to the rural economy. Papua New Guinea has porphyry-copper, silver and gold mines; Fiji is endowed with large porphyry-copper deposits and two gold mines; the Solomon Islands recently opened its first gold mine.[15] Bauxite and alumina are principal exports of Jamaica and Guyana. Quarrying for the production

[13] World Bank, Rural Development and Agriculture in Pacific Islands.
[14] Department of Economic and Social Affairs (2006).
[15] UNEP (2004c).

of industrial minerals and construction material, including limestone, gypsum, marble, sand and gravel also contributes to non-agricultural rural income in small island developing States across all three regions. In the case of Trinidad and Tobago, and more recently Timor-Leste, the rural economy continued to be dominated by the oil industry.

32. Mining, while a key contributor to economic growth in small island developing States, also causes physical dislocation and environmental degradation in rural areas. Much attention has been given to the implementation of policies to ensure the rehabilitation of mined lands and the resettlement of displaced landowners. Where governance issues and resource constraints have limited enforcement and land rehabilitation, mining has accelerated degradation and increased pollution.

B. Scope for growth in the rural economy

33. Tourism is a major industry linked to the rural economy because of the ecotourism subsector. However, many small island developing States do not treat it as such because of its primary locus on the coasts, and its role as the principal driver of coastal urbanization. Indeed, in the Caribbean it is the tourism industry that influences the significant movement of labour from the rural areas, attracting women and youth in particular, in search of more productive employment in the service industries. The increased migration of labour to cities and coasts is both a symptom and a cause of sluggish rural development. Recent contractions in the agrarian sector, due mainly to the loss of preferences, falling commodity prices, and natural disasters, have also contributed to this demographic shift.

34. Governments of the respective regions have committed to taking necessary steps to revitalize and strengthen the rural economies of small island developing States, with a view to reducing rural poverty and stemming rural-urban migration. It is acknowledged that for rural prosperity to increase, attention must be given to the implementation of appropriate policies and strategies directed to the most vulnerable groups of the rural economy. These should include skills training to expand participation in both agricultural and rural non-agricultural activities, particularly those with strong market linkages to both the tourism and agricultural sectors, such as micro-industries in handicrafts, fish and food packaging. Support for diversification of the agriculture sector into areas like horticulture, which finds a ready market in the tourism industry as well as for export, is also being provided. Among the challenges to be addressed are facilitation of access to innovative technologies to strengthen production, processing and marketing systems; the modernization and expansion of agricultural services to improve productivity; the development of institutional capacity in agricultural and rural organizations; promotion of intersectoral linkages, and improvement in rural infrastructure and services.

V. Agriculture

35. The rehabilitation, strengthening and diversification of the agriculture sector, within the context of the promotion of rural development and rural prosperity, and enhancement of the quality of life, remains a central objective of small island

developing member States. Land resources in small island developing States devoted to agriculture are shared between subsistence small farms and larger-scale commercial systems, producing mainly for export. The larger tracts of more productive agricultural lands are typically dominated by commercial agriculture in those small island developing States whose land use was historically shaped by their mono-crop plantation economies. In these commercial systems, found in many small island developing States, including Cape Verde, Cuba, Dominican Republic, Fiji, Grenada, Jamaica, Mauritius and Saint Lucia, production is concentrated on a few primary commodities, notably bananas, sugar cane, coffee, coconuts, cocoa and spices. This land-use tradition continues even today, with agriculture continuing to serve as a major contributor to economic growth and rural development in small island developing States (see table 2). In Mauritius, sugar cane plantations still cover nearly one half of the island's land area.[16]

Table 2
Arable land and permanent crops as a percentage of total land area: selected small island developing States[17]

Country	*1961*	*1981*	*2001*
Dominica	21.3	22.7	26.7
Dominican Republic	20.8	29.6	33.0
Fiji	8.4	9.9	15.6
Grenada	55.9	44.1	35.3
Jamaica	25.5	21.2	26.2
Mauritius	45.8	52.7	52.2
Saint Kitts and Nevis	44.4	36.1	22.2
Saint Lucia	23.0	27.9	29.5

Source: FAOStat; see http://faostat.fao.org/.

36. High percentages of land under cultivation may also be indicative of widespread small-scale and subsistence agriculture in small island developing States. Subsistence small farming, usually conducted on plots of fewer than two hectares, more often on marginal lands, and typically employing family labour, produce mainly to meet local and family needs. Main crops are usually roots and tubers, food and fruit trees outside forests, including breadfruit and citrus. Subsistence farming often also includes small-scale livestock, pig and poultry production. Subsistence agriculture plays a vital role in the economy, nutritional status and social well-being of the rural poor in small island developing States. In many Pacific small island developing States, these traditional systems provide over 90 per cent of the rural domestic market.

[16] Indian Ocean Commission (2004).

[17] Arable land: land under temporary crops, land under market and kitchen gardens and land temporarily fallow (less than five years).

A. Fisheries

37. The fisheries sector is deserving of special mention because of its central role in the economic life of coastal communities and its critical contribution to nutrition and food security in all small island developing States. Fishing is especially big business in the Pacific. There, the fisheries sector is often classified by scale of operation: industrial; small-scale commercial; and subsistence fisheries. Pacific small island developing States benefit from deep-sea industrial fisheries primarily due to the licensing fees collected from distant fishing nations. However, it is from subsistence coastal fishery resources that Pacific islanders gain significant economic and nutritional benefit.

38. It is estimated in some Pacific small island developing States that over 80 per cent of all coastal catch is consumed in the subsistence sector, particularly in rural areas. All small island developing States regions are actively engaged in commercial coastal fisheries for export income. Fisheries exports have expanded consistently across all small island developing States subregions. In both the Caribbean and Pacific, exports have increased by approximately 40 per cent since 1990. The sustainable management of fisheries has thus become increasingly urgent, as the demand for both subsistence and commercial fishery products have raised the incidence of overfishing.

B. Agricultural production and trade

39. The importance of the sector notwithstanding, agriculture has been in decline in small island developing States for the past two decades. Unsustainable agricultural practices, including extensive land clearing, intensive land use, mono-cropping, reduced fallow periods, as well as the impact of climate change and natural disasters have all contributed to increased land degradation and decreasing productivity of agricultural systems.

40. Most significant, however, has been the sector's vulnerability to economic shocks. The value of total small island developing States commodity exports has declined considerably, both absolutely and by percentage of exports in world agricultural exports. Sugar and banana exports have declined in both volume and value. In the Organization of Eastern Caribbean States, banana production and exports have declined sharply due to the erosion of trade preferences. Historically, small island developing States have received preferential agricultural market access under a number of bilateral, non-reciprocal agreements, the most important being the European Union/African, Caribbean and Pacific Lomé Agreement. Small island developing States also receive preferences under regional agreements, such as the Caribbean Basin Economic Recovery Act. All small island developing States, as well as all other developing countries, benefit from the Generalized System of Preferences. Some small island developing States also benefit from preferences under the recently introduced EU/Everything But Arms scheme and the United States/African Growth and Opportunity Act framework. Within these arrangements, the commodities of greatest importance to small island developing States have been sugar, bananas and rice.

41. Under the World Trade Organization trading regime, preferences such as those granted in the EU/African, Caribbean and Pacific Lomé Agreement were

disqualified. The EU preferences to African, Caribbean and Pacific countries have thus been sanctioned by a time-limited waiver, pending the conclusion of EU/African, Caribbean and Pacific Economic partnership agreements. Economic partnership agreements are intended to spur development and preserve the special status of African, Caribbean and Pacific countries in accordance with World Trade Organization regulations. Until recently, substantial benefits accrued to small island developing States through these agricultural trade preferences. By one estimate[18] small island developing States received an estimated $600 million annually in preference value in the context of the EU/African, Caribbean and Pacific framework. By commodity, sugar, fish and bananas account for about 90 per cent of the preference value, with sugar claiming nearly 80 per cent of this. The reform of the EU-African, Caribbean and Pacific Sugar Protocol and other preferences has therefore had serious impact on the agriculture sector in a number of small island developing States. The sugar-reliant economies of Fiji, Guyana, Jamaica, Mauritius, Seychelles, and Trinidad and Tobago, which absorb 90 per cent of EU preferences, have been particularly hard hit, while the banana exporters, namely, Dominica, Jamaica, Saint Lucia and Saint Vincent and the Grenadines, have also witnessed sharp declines in preference values.[19]

42. The viability of small island developing States agricultural exports have also been affected by other external economic factors. Over the last 20 years, commodity prices for bananas, sugar, cocoa and copra have declined. The combination of preference erosion, increasing competition falling commodity prices and unfavourable exchange rates has coincided with the contraction of the sugar, banana, rice and coconut industries in small island developing States. These trends have had real implications, especially in those economies that have been narrowly focused around the export of these agriculture products.

(a) Bananas

43. Cuba, Dominican Republic, Haiti, Jamaica, Papua New Guinea and Saint Lucia together account for approximately 80 per cent of the small island developing States' banana production, which is about 3 per cent of the global market. Compared to their competitors, small island developing States fruit are grown on small holdings and subject to higher production and transportation costs. As a result, the small island developing States economies most dependent on bananas, namely Dominica, Saint Lucia, and Saint Vincent and the Grenadines, have significantly reduced production. This has had serious repercussions, particularly in Saint Lucia, where in 2002, bananas were 50 per cent of agricultural output and 60 per cent of total exports. Production and exports have also declined across the Windward Caribbean islands and Jamaica. However, the Dominican Republic, the largest Caribbean exporter, has steadily increased exports since the 1990s after joining ACP[20] (see table 3).

[18] FAO (2005).
[19] Ibid.
[20] Ibid.

Table 3
Banana production, selected small island developing States
(Volume in thousands of tons)

Country	*1990*	*2000*	*2001*	*2002*	*2003*	*2004*	*2005*
Barbados	0.75	0.52	0.55	0.57	0.60	0.64	0.66
Cuba	195.00	265.59	318.06	206.90	315.40	454.20	289.01
Dominica	66.71	33.50	25.00	23.00	19.00	14.45	10.32
Dominican Republic	395.10	343.31	442.01	502.88	514.95	468.32	547.43
Grenada	12.00	4.05	4.10	4.10	4.10	2.12	0.99
Jamaica	127.66	102.00	108.00	109.00	115.00	108.36	105.70
Mauritius	6.14	8.50	11.00	7.20	12.09	12.00	11.58
Saint Vincent and the Grenadines	82.73	46.00	46.00	46.00	50.00	45.00	50.00
Samoa	14.00	20.00	20.00	21.50	21.50	23.09	24.28
Vanuatu	11.40	13.00	13.00	13.50	14.30	13.98	14.04

Source: FAOStat.

(b) **Sugar**

44. Similarly, sugar production declined in almost all the economies under consideration, with only Belize, Guyana and Papua New Guinea reporting greater output. This downward trend is also due to the loss of preferences; a price crash in 1998 that strongly impacted the Dominican Republic; droughts and cyclones that hit Mauritius in 2000; and political instability in Fiji[21] (see table 4).

Table 4
Sugar production, selected small island developing States

	Average production (volume in thousands of tons)			*Annual average growth rate (percentage)*	
Country	*1990-1992*	*2000-2002*	*Percentage change*	*1996-2000*	*2001-2002*
Barbados	67	53	-21	2	-7
Belize	98	116	18	1	-3
Cuba	7 740	3 818	-51	0	0
Dominican Republic	710	469	-34	-10	0
Fiji	413	325	-21	-7	0
Guyana	164	291	78	2	4
Jamaica	217	201	-8	-3	1
Mauritius	612	544	-11	-1	2

[21] Ibid.

Country	Average production (volume in thousands of tons) 1990-1992	2000-2002	Percentage change	Annual average growth rate (percentage) 1996-2000	2001-2002
Papua New Guinea	34	46	35	5	-3
Trinidad and Tobago	106	97	-9	-4	4
Other small island developing States	89	85	-4	12	2
Total	**10 215**	**5 998**	**-41**	**-1**	**0**

Source: FAO (2005a) and FAOStat.

(c) Rice and coconut/copra

45. Rice and coconut production in small island developing States have fluctuated over the last decade. Between 1990 and 2001, Cuba, the Dominican Republic and Guyana expanded rice production, whiie Fiji, Guinea-Bissau, Haiti and Suriname saw declines due to falling yields, bad weather and political instability. Table 5 shows the variability in coconut and copra production over the last 15 years. In the Pacific region, the high cost of transport and processing has slowed the growth of coconut industries, which have otherwise contributed greatly to rural development, especially in the smaller islands and atolls.

Table 5
Coconut and copra production, selected small island developing States

Country	Production of coconuts and copra (volume in thousands of tons) 1990	2000	2005
Barbados	1.5	1.6	2.0
Comoros	63.7	74.1	80.5
Cuba	25.0	80.2	113.8
Dominica	11.3	11.4	10.9
Dominican Republic	154.7	140.0	107.5
Fiji Islands	251.3	170.6	140.1
Grenada	7.7	6.5	6.0
Guinea-Bissau	37.0	45.5	48.1
Guyana	38.7	78.6	66.1
Jamaica	77.7	170.0	198.7
Kiribati	58.8	96.0	109.8
Maldives	12.7	15.7	15.8
Mauritius	2.3	1.5	1.7
Saint Vincent and the Grenadines	20.0	2.1	2.6
Samoa	138.0	140.0	152.8
Sao Tome and Principe	31.0	25.5	26.3
Seychelles	6.7	3.2	2.5

	Production of coconuts and copra (volume in thousands of tons)		
Country	*1990*	*2000*	*2005*
Solomon Islands	180.0	246.0	276.0
Trinidad and Tobago	40.0	23.2	10.6
Vanuatu	356.8	248.0	315.0

Source: FAOStat.

C. Scope for diversification

46. The downward trend in the production and export of principal agriculture products has had real implications for development in small island developing States, where agro-industries are an economic lifeline. In response, many small island developing States have been dedicating their resources to negotiating a new path forward in order to diversify and revitalize their rural sectors.

(a) Biofuels

47. Some countries have been working to develop their capacity for biofuel production, with the aim of servicing local and growing international demand for alternative fuels. Mauritius, a leading sugar producer, is drafting legislation to support research into and implementation of biodiesel made from sugar, soya, palm, coconut and vegetable oils, as well as jatropha curcas.[22] Similarly, in the Caribbean, Cuba, Dominica, Dominican Republic and Jamaica, for instance, are reviewing the viability of their agriculture sectors to produce ethanol from sugar cane, as well as other biofuels. In the Pacific, declining global commodity prices coupled with the increasing price of fossil fuels have also encouraged biofuel exploration in the region, with countries such as Fiji, Papua New Guinea, Samoa, Solomon Islands and Vanuatu initiating pilot projects. Ongoing research regarding the viability of this industry will address questions having to do with its possible impact on food security and its comparative advantage over traditional exports of raw agro-products.[23]

(b) Agro-tourism

48. Small island developing States have also been working to strengthen the resilience of their rural industries by forging links between the agricultural and service sectors. The Caribbean has been particularly active in this regard, instituting programmes to use locally harvested produce in hotel restaurants and implementing agro- and adventure tourism initiatives that enhance tourism revenue in the remote rural areas. Festivals, health or wellness-oriented tourism programmes, and the creation of inland nature parks and gardens all provide good opportunities for marketing local agricultural and rural products. The development of cottage industries to promote the sale of local crafts and medicinal items often benefits the rural, small and medium-sized business owners and women that produce the value-added products for distribution.

[22] Mauritius Ministry of Environment (2007).

[23] SOPAC (2007).

Case study

Communities in the Marshall Islands are exploring the use of cooperative business models to develop and service a niche market in sea cucumbers.

Sea cucumbers are a highly valuable export commodity, especially in Asia where they are considered of great gastronomic and medicinal value. They can also be raised in a sustainable and inexpensive way, using traditional canoes and without the requirement of nets, fences or added food supplies.

Certain communities in the Marshall Islands are uniquely positioned to pursue this market, and are engaging in public-private partnerships to establish sustainable sea-cucumber aquaculture as well as the business infrastructure necessary to meet international demand for this marine product. The initiative is an excellent example of a successful partnership between government, the private sector and local communities.

(c) Niche markets

49. Many small island developing States are also focusing on the development of niche markets and value-added products to reinvigorate rural industry. Some of the markets and products being pursued include organic produce, medicinal plants and herbs, new types of juices, boxed and canned goods, spices, oils, crafts, music and rum. In the Pacific, some countries are researching the potential for developing value-added export products from local crops, such as taro and the noni fruit, which is valued for its medicinal properties. In the Atlantic, Indian Ocean, Mediterranean and South China Sea region, the Comoros is one of the world's largest producers of vanilla and ylang-ylang, used in perfumes; Sao Tome and Principe is known for its cocoa production. Other products such as honey, rum and essential oils are also produced across the small island developing States, many of which are working to establish the medicinal, health, and culinary significance of their value-added products in international markets.

D. Improving food security

50. In addition to enhancing the rural development, such programmes also have the potential to increase food security in small island developing States by expanding the agriculture sector and encouraging diversification into a wider array of fruits and vegetables consumed by tourists. Small island developing States currently import more than 50 per cent of their daily caloric intake, and since the 1990s, they are increasingly less able to afford this expenditure.[24] The rates of malnutrition in many small island developing States have declined over the last 30 years, but remain unacceptably high in some countries, such as Comoros, Dominican Republic, Guinea-Bissau, Haiti and Solomon Islands. It is estimated that

[24] FAO (2005).

the establishment of effective intersectoral linkages between agriculture and tourism would dramatically reduce a country's food import bill, while giving agriculture a greater stake in the national economy.[25]

VI. Regional and international cooperation

51. The small island developing States have received substantial assistance from their respective regional intergovernmental and technical organizations and from relevant agencies of the United Nations system, in support of their effort to promote agricultural development and rural prosperity while protecting their land resources.

52. Regional intergovernmental organizations have provided critical human capacity, resources and assistance to small island developing States in identifying and addressing challenges to rural development, especially through trade promotion. In the Pacific, programmes such as the Pacific Islands Country Assistance Strategy and the Pacific Engagement Framework have identified major strategic priorities including safeguarding service delivery by improving resilience to natural hazards; enhancing sustainable revenues from resource-based sectors; providing an enabling environment for private sector investment; improving access to regional markets; and improving the quality of health and education and fighting HIV/AIDS.[26] In the Caribbean, the Regional Transformation Programme for Agriculture is designed to facilitate transformation of the agricultural sector, increasing its competitiveness.

53. Since the adoption of the Mauritius Strategy in 2005, the Ministers of Agriculture of the Pacific and Caribbean and the Caribbean Community (CARICOM) Heads of Government have endorsed the expansion of the Regional Programmes of Food Security in small island developing States. Initiated in 2003, these programmes are intended to increase the productivity of small farmers and to improve their market access at the regional and international levels. The expanded programme is addressing development constraints in the rural sector through investments in rehabilitation and construction of rural infrastructure, including water management, crop storage and processing. The programmes will also provide policy and technical assistance that address limitations in market access to food as well as disaster preparedness, management and mitigation. The scaling up of the Regional Programmes of Food Security will engage a broad range of ministries, civil society, private sector organizations and the donor community in activities to build synergies with other initiatives and ensure coherence with existing strategies, including the Millennium Development Goals, Poverty Strategy Reduction Papers and national development frameworks.

54. CARICOM has committed to supporting a series of interventions for strengthening agriculture for sustainable growth and development, known as the Jagdeo Initiative, after President Bharrat Jagdeo of Guyana. The Initiative targets the repositioning of agriculture, no later than 2015, in a manner that contributes to national and regional development and to economic, social and environmental sustainability, and that enables the region to achieve an acceptable level of food security. It was proposed that the Initiative be pursued in tandem with the Regional Programmes of Food Security, with the full support of FAO.

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[25] Ashley and others (2006).

[26] World Bank, Rural Development and Agriculture in Pacific Islands.

55. Support is also being provided to small island developing States within the framework of the FAO Plan of Action on Agriculture in Small Island Developing States. Priority is given, inter alia, to creating an environment for agricultural diversification, pursuing policies to improve production and productivity; to developing trade and marketing policy frameworks; to developing agroforestry and organic agriculture, to improving marketing and processing by establishing food quality control and to reducing post-harvest losses. Successful projects include the re-establishment of Samoa's staple, taro, through propagation of varieties tolerant to leaf blight; the strengthening of banana production in the Maldives; development of an integrated pest management policy in Trinidad and Tobago, and the development of agro-tourism linkages in Antigua and Barbuda.

56. Regarding capacity-building to strengthen food security at the national level in the Pacific, FAO, through its subregional representative based in Samoa, has increased partnerships with Pacific regional organizations, such as the secretariat of the Pacific Community, the Pacific Islands Forum secretariat, the secretariat of the Pacific Regional Environment Programme and the University of the South Pacific, as well as other United Nations organizations including United Nations Development Programme, World Health Organization and International Fund for Agricultural Development.

57. Pacific small island developing States also receive significant support towards strengthening their fisheries programmes from the Pacific regional organizations. The secretariat of the Pacific Community has focused on scientific research on the development and management of coastal fisheries for all Pacific small island developing States; the Forum Fisheries Agency offers guidance in respect of the economic and policy aspects of offshore tuna fisheries; the secretariat of the Pacific Regional Environment Programme supports initiatives for the protection of marine species and marine biodiversity.

58. The Inter-American Institute for Cooperation on Agriculture is providing a broad range of assistance to Caribbean small island developing States within the framework of the Agro Plan 2003-2015, which details Hemispheric Ministerial Agreements for the development of Agriculture and Rural Life in the Americas. Attention within this framework is being given to the development of competitive enterprises and increased investment in the improvement of rural life; the promotion of innovative types of financial and non-financial services, and risk management in the rural areas; the promotion of increased coordination among farmers, research centres and agricultural services.

59. The Inter-American Institute for Cooperation technical cooperation agenda for the Caribbean combines work in six thematic areas with a view to repositioning agriculture and rural life through the development of viable rural industries: trade and agribusiness development; agricultural health and food safety, technology and innovation, sustainable rural development, education and training; and information and communication. The Alliance for Sustainable Development in Agriculture and the Rural Milieu was created as a forum for Ministers of Agriculture, academia, agribusiness, rural women and youth, to promote a participatory approach and build consensus on policies, strategies and programmes among key stakeholders in the rural sector.

VII. Continuing challenges

60. Greater investment in the rural economy and agriculture sector of small island developing States is required to overcome current trade, economic, environmental and institutional hurdles.

61. The agricultural and infrastructural setbacks brought by natural disasters, sea level rise and the salinization of soil and freshwater due to climate change are among the vicissitudes with which these Member States must inevitably grapple. The support of the international community in their efforts to design and implement appropriate adaptation measures is necessary. Policies and strategies to stem deforestation and watershed and land degradation are also urgently required.

62. The strengthening of land tenure and land titling systems and the development of integrated land management policies are imperative to assure greater equity in land distribution, to strengthen food security and to promote the development and prosperity of the rural economies of small island developing States. In this regard, the strengthening of institutional infrastructure, the preparation of appropriate laws, and creation or strengthening of regulatory mechanisms in support of sustainable land management is required.

63. There is need for greater investment in the development and promotion of rural micro-enterprises, and in enhancing the technological and managerial capacity of agribusinesses and rural enterprises. Training in the promotion of innovative export products, in such areas as packing labelling and brand differentiation, is also needed. These are important precursors for strengthening the productivity, profitability and competitiveness of small island developing States agricultural and rural enterprises.

64. Development of the rural economy will also benefit from the design and implementation of policies promoting stronger intersectoral linkages between agriculture and strong growth sectors such as tourism and fisheries. Programmes and investment initiatives to enhance the participation of women and youth in the rural economy are urgently required.

65. The strengthening of civil society organizations and the promotion of increased interaction among social and economic stakeholders are desirable in fostering a participatory approach to rural development in small island developing States.

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